Raphael Wittenberg, Bo Hu

The impact of Alzheimer's disease in China

Article (Accepted version) (Refereed)

Original citation:
Wittenberg, Raphael and Hu, Bo (2016) *The impact of Alzheimer's disease in China.* EBioMedicine. ISSN 2352-3964

DOI: 10.1016/j.ebiom.2016.02.018

The Impact of Alzheimer's Disease in China

Raphael Wittenberg, Bo Hu

PII: S2352-3964(16)30051-2
DOI: doi: 10.1016/j.ebiom.2016.02.018
Reference: EBIOM 479

To appear in: *EBioMedicine*

Received date: 9 February 2016
Accepted date: 9 February 2016

Please cite this article as: Wittenberg, Raphael, Hu, Bo, The Impact of Alzheimer's Disease in China, *EBioMedicine* (2016), doi: 10.1016/j.ebiom.2016.02.018

The Impact of Alzheimer's Disease in China

Raphael Wittenberg and Bo Hu

Personal Social Services Research Unit, London School of Economics and Political Science, UK

The age structure of the population is changing rapidly in the People's Republic of China (PRC). When the Chinese government introduced the one-child policy to control the fertility rates of the population three decades ago, less than 5% of the population was aged 65 years and over. Today the figure rises to about 10% (National Bureau of Statistics of China, 2014). It was estimated by the Ministry of Civil Affairs of the PRC (2014) that 212 million people were aged 60 years and over in 2014, a number equivalent to the combined population of Germany, France and the UK. Dementia is a common disease in late old age. In a developed economy, the government and society may spend tens of billions of pounds each year to provide care for people with dementia (Prince et al., 2014). In the case of China, despite the huge number of older people and massive demand for care, very little is known about the economic costs of dementia care. Data needed for research in this particular field are often not in the public domain or non-existent. It could be time-consuming to put the fragmented pieces of information together and present a holistic picture of a country with considerable local variations. Meanwhile, the formal care sector in the country is still in its infancy, so responsibilities to care for people with dementia mostly fall on the shoulders of unpaid carers (Wong and Leung, 2012). And costing unpaid care for people with dementia gives rise to a whole range of complications and challenges in relation to research methodologies (Wimo et al., 2013).

In this issue of *EBioMedicine*, the paper by Keogh-Brown et al. provides a timely analysis of the current and projected future impact of Alzheimer's Disease (AD) on the Chinese economy (Keogh-Brown et al., 2016). Projections of future costs are important for well-informed policy-making. Governments need to be aware of the impact of population ageing on their economies. Without reliable projections they cannot decide what measures to take in respect of different public programmes. This is especially important in the case of China: the country will experience an especially large change in its old age dependency ratio (ratio of older people to people of working age) due to a combination of rising life expectancy and low fertility rates. Although the one child policy has recently been removed, its effect on the age structure of the population will persist over the coming decades.

A notable strength of the Keogh-Brown et al. paper is that it investigates the sensitivity of the estimated impact of AD to some of the key assumptions of the modelling. It does not just produce a single forecast. It shows for example that how projected impact on the economy is, inevitably, sensitive to trends in future AD incidence rates. If they declined, as has occurred in the US and UK due to changes in life-style related risk factors, the impact would be lower than the central projection; but, if current adverse trends in life style risk factors in China continued and incidence rates rose, the impact would be higher. Policy makers need to appreciate both the degree of uncertainty surrounding the future costs of AD and the factors driving costs of AD to which future cost estimates are sensitive.

Another important strength of the paper is that it considers the impact of AD on the wider economy and not just on health care costs. It shows that over 60% of the estimated cumulative impact is due to losses of productive labour. AD affects the labour market participation of people living with the condition and their unpaid family carers if they are of working age. In addition, caring for the rising numbers of people with AD will require that a rising proportion of the workforce will need to be employed to provide this care. This will in turn have an impact on the proportion of the workforce employed in different sectors of the economy, relative wages in different sectors and on the price of care relative to the price of other goods and services. Recruitment and retention of sufficient staff to provide good quality care for future cohorts of people with AD and other disabling conditions will present challenges in China as in most countries.

A further crucial issue is whether the supply of unpaid care, provided mainly by family, will keep pace with the rising demand for care for people with AD. China's one-child policy means that the country may face an especially large risk of a shortfall of unpaid care. The Keogh-Brown et al. paper, through concentrating on the impact on the economy, includes the costs of unpaid care where the carer loses hours of paid work but does not include an opportunity cost where the carer loses hours of household work or leisure. If the provision of unpaid care does not keep pace with rising demand, this will place even greater pressure on formal care services, workforce required to staff formal services, costs of care services and impact on the economy.

The paper's findings have a number of important implications for policy. While the findings relate specifically to China, the implications for policy are relevant internationally. Since the future impact of AD on the economy will be huge, there will be a huge potential gain if a disease-modifying treatment can be developed. Research to develop such an intervention should be given high priority. The scope for primary prevention should also be pursued. If adverse trends in life-style risk factors can be reversed, there is evidence that a downward impact on the prevalence of AD (and other dementias) can be achieved (Barnes and Yaffe, 2011; Norton et al., 2014). Since neither of these policy measures could yield benefits in the short or medium term, priority should also be given to improving care for people living with AD and their unpaid carers. This may enable more unpaid carers to combine caring and paid work without such burden or stress that they are obliged to give up caring or paid work. This is crucial both for the quality of life of unpaid carers and those to whom they provide care and for the wider economy.

Disclosure

The authors declared no conflicts of interest.

References

Barnes, D. E. and K. Yaffe (2011). "The Projected Effect of Risk Factor Reduction on Alzheimer's Disease Prevalence." Lancet Neurology **10**(9): 819-828.

Keogh-Brown MR, Jensen HT, Arrighi HM and Smith RG (2016). The Impact of Alzheimer's Disease on the Chinese Economy. EBioMedicine doi:10.1016/j.ebiom.2015.12.019 http://www.sciencedirect.com/science/article/pii/S2352396415302474

Ministry of Civil Affairs of PRC (2014). Statistical Report of Social Services Development 2014. Beijing, Ministry of Civil Affairs of People's Republic of China. Available at: http://www.mca.gov.cn/article/sj/tjgb/201506/201506008324399.shtml. Accessed on 09 Sep. 2015.

National Bureau of Statistics of China (2014). China Population and Employment Statistics Yearbook 2014. Beijing, National Bureau of Statistics of China.

Norton, S., F. E. Matthews, D. E. Barnes, K. Yaffe and C. Brayne (2014). "Potential for Primary Prevention of Alizheimer's Disease: An Analysis of Population-Based Data." Lancet Neurology **13**(8): 788-794.

Prince, M., M. Knapp, P. Prina, M. Guerchet, M. McCrone, P. Prina, A. M. Comas-Herrera, R. Wittenberg, B. Adelaja, B. Hu, D. King, A. Rehill and D. Salimkumar (2014). Dementia UK: Update. London, Alzheimer's Society.

Wimo, A., L. Jonsson, J. Bond, M. Prince and B. Winblad (2013). "The Worldwide Economic Impact of Dementia 2010." Alzheimer's & Dementia **9**: 1-11.

Wong, Y. C. and J. Leung (2012). "Long-Term Care in China: Issues and Prospects." Journal of Gerontological Social Work **55**(7): 570-586.